In the Claims

1. - 104. (cancelled)

105. (New) A synthetic retroviral pol gene or gag-pol gene or a region of a synthetic retroviral pol gene or gag-pol gene, for the expression of a retroviral enzyme or part of a retroviral enzyme in a eukaryotic cell, the retroviral wild-type gene having non-preferred codons when referred to the eukaryotic cell wherein said retroviral gene is expressed, the number of non-preferred codons of the wild type gene being such that replacement of all the non-preferred codons of the wild type gene by preferred codons for the eukaryotic cell results in a GC content in the synthetic gene of 65 % or higher, wherein:

-the synthetic gene has a nucleotide GC content between 53 and 63 %, and wherein

-the expressed retroviral protein encoded by the synthetic gene being expressed at a level to provide in an enzymatic assay enzymatic activity of the expressed retroviral protein of the synthetic gene in the eukaryotic cell, when compared to the enzymatic activity in said assay of the expressed retroviral protein of the wild type retroviral gene, said enzymatic activity being selected from the group of integrase activity, reverse transcriptase activity and proteolytic activity .

106. (new) The synthetic gene according to claim 105 wherein the synthetic gene has a nucleotide GC content between 55 and 61 %.

107. (New) The synthetic gene according to claim 105, wherein the detectable enzymatic activity includes at least promotion or stimulation of integration of DNA fragments into the host cell DNA.

108. (New) The synthetic gene according to claim 105, wherein the retroviral protein is a protease, a reverse transcriptase, an integrase protein or a polyprotein gag-pol precursor thereof.

109. (New) The synthetic gene according to claim 105, wherein the expression of the protein is at a level of at least 200% of that expressed by the wild type gene in the eukaryotic cell.

110. (New) The synthetic gene according to claim 105 having the nucleotide sequence of SEQ ID NO:1 or a homologue thereof.

111. (New) A eukaryotic expression vector comprising a synthetic retroviral pol or gag-pol gene or a region thereof in accordance with claim 105.

112. (new) A eukaryotic expression vector comprising the synthetic gene encoded by SEQ ID NO:1 or a homologue thereof.